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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,430	07/25/2001	Norbert Breuer	R 38582	4686

7590 10/07/2003

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/911,430

Applicant(s)

BREUER, NORBERT

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording (in this case the preamble), it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Meltser et al (U.S. Patent 5,763,113). The reference is directed to a fuel cell monitoring system (see abstract). Regarding claim 10, the fuel cell may be contained in a motor vehicle (see col. 1, line 18). Regarding claims 1, 10, and 11, the system may further comprise a fuel preparation unit (i.e., reformer) (see col. 5, line 55). The system comprises a measuring unit for measuring a voltage and a hydrogen concentration (see elements 44 and 36 in Fig. 1). Regarding claims 1-4, 10, and 11, the known changes in hydrogen concentration and voltage as a function of time are generated (see elements 58 and 86 in Fig. 2). Regarding claims 3 and 4, the voltage is an

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electrochemical parameter, and the hydrogen concentration is a non-electrical parameter.

Regarding claims 1, 10, and 11, an evaluation unit (104) evaluates the time-dependent change of each parameter in dependence on the time-dependent change of the other parameter (see Fig. 2).

Regarding claim 5, the time-dependent change of each parameter is compared to desired changes of the parameters (see elements 59 and 92 in Fig. 2). Regarding claim 7, the system comprises a fuel cell controller (40) (see Fig. 1; col. 3, lines 1-5). Regarding claim 6, a change in hydrogen concentration affects the voltage (see col. 4, lines 33-38). The evaluation unit further comprises a filtering device for calculating the voltage as a function of time by correcting for the power demand attributable to the stack (see col. 2, lines 57-60). Regarding claim 9, the evaluation unit further comprises a recording device for recording the time-dependent traces of the parameters (see col. 5, lines 30-35).

Thus, the instant claims are anticipated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meltser et al.

The reference is applied to claims 1-7 and 9-11 for the reasons stated above. However, the reference does not expressly teach the presence of a control unit for controlling the fuel preparation unit (i.e., reformer).

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use such a control unit to control the reformer of Meltser et al. In column 3, line 1, the reference teaches that "[s]uch measures may include triggering visual or audible alerts to the stack operator to take appropriate action, or automatically initiating preventative measures such as (a) reducing H₂ pressure, (b) increasing cathode gas flow rate or pressure or (c) starting a preprogrammed stack shutdown sequence." The disclosure of a stack shutdown sequence would indicate to the artisan that all components in the system, including the reformer, would be shut down by the controller. Accordingly, the recitation in claim 8 of a control unit for controlling the fuel preparation unit is not considered to distinguish over the reference.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: JP 10-284099, which discloses a fuel cell control device using dV/dt and dI/dt values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

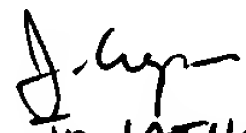
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 872-9310 (for non-final communications) or (703) 872-9311 (for after-final communications).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

September 26, 2003


JONATHAN CREPEAU
PATENT EXAMINER
ART UNIT 1746